

REMARKS

Applicants respectfully request reconsideration and allowance of the pending claims.

I. Status of the Claims

Upon entry of this amendment, claims 1-9 and 72 through 78 remain pending. Claims 22-30 have been canceled.

Claims 1, 5, 6, 74, and 75 have been amended. The amendments to these claims find support in applicants' published application at paragraph [0051]. See also Table R2 on pages 33 and 34 of the published application.

II. Restrictions/Elections

Applicants hereby affirm the election of the claims of Inventions I and II, encompassing claims 1-9 and 72-78. Applicants have canceled the claims of Invention III, encompassing claims 22-30. Applicants reserve the right to pursue these claims in a separate application.

III. Drawings

Applicants submit herewith a replacement drawing sheet in which reference #32 has been deleted from Figure 2.

IV. Claim Rejections Under 35 U.S.C. §102(b)

Reconsideration is requested of the rejection of claims 1-9 and 72-78 as being anticipated by Itoh et al. (U.S. 4,970,128).

Claim 1 is directed to a composition for use as a catalyst in oxidation or reduction reactions, the composition comprising platinum and copper, wherein (i) the concentration of platinum is greater than 50 atomic percent and less than about 80 atomic percent, and (ii) the composition has an average particle size

which is less than 25 angstroms (Å).

Itoh et al. describe various Pt-Fe-Cu, Pt-Fe, and Pt-Cu alloys on Tables 1 and 2 of their specification, spanning columns 13 and 14. Notably, the only deposited material having a particle size of less than 25 angstroms (Å) is pure platinum deposited upon carbon, which was measured to have a particle size of 23 angstroms. None of the alloy materials comprising platinum and copper wherein the platinum concentration is greater than 50 atomic percent have a particle size any smaller than 28 angstroms. As stated by MPEP §2131:

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "When a claim covers several structures or compositions, either generically or as alternatives, the claim is deemed anticipated if any of the structures or compositions within the scope of the claim is known in the prior art." *Brown v. 3M*, 265 F.3d 1349, 1351, 60 USPQ2d 1375, 1376 (Fed. Cir. 2001) (claim to a system for setting a computer clock to an offset time to address the Year 2000 (Y2K) problem, applicable to records with year date data in "at least one of two-digit, three-digit, or four-digit" representations, was held anticipated by a system that offsets year dates in only two-digit formats). See also MPEP § 2131.02. **"The identical invention must be shown in as complete detail as is contained in the ... claim."** *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim, but this is not an *ipsissimis verbis* test, i.e., identity of terminology is not required. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).(emphasis added)

Itoh et al. fail to disclose any Pt-Cu composition with a particle size of less than 25 angstroms, and therefore do not

disclose "each and every element" of the claims. Moreover, as emphasized above in the MPEP, there can be no anticipation where the prior art does not show the product in as complete detail as is contained in the claim; and here the Itoh et al. reference does not disclose this express requirement of less than 25 angstroms.

Applicants' <25 angstroms requirement is not a merely routine selection which can be achieved by merely routine means. Rather, the selected alloys shown in applicants' specification at Table R2 having an average particle size of less than 25 angstroms were prepared according to a multi-step process, the description of which begins with Example 3, paragraph [0167]. In a first step, applicants prepared a suspension comprising a selected concentration of copper nitrate and platinum supported on carbon support. The suspension was freeze dried for 24 hours to remove the solvent. See paragraph [0168]. Next, the dried solids were subjected to "a heat treatment to reduce the constituents therein to their metallic state, and to fully or partially alloy the copper and the platinum on the carbon black particles." See paragraph [0169]. This process yielded the PtCu alloys having the characteristics described in Tables P and Q. While these PtCu alloys are catalyst materials having redox activity, the process for forming catalytic compositions meeting the requirements of claim 1 is not necessarily complete. Rather, the catalytic materials are subjected to various washing steps as described in Example 5, the conditions of which are outlined in Table R1. Washing involves acid washing in order to remove a portion of the copper loading, to thereby yield PtCu alloys having relatively high platinum concentrations that also meet the average particle size requirements of claim 1. Applicants process for preparing the platinum-copper catalyst

materials of <25 angstroms therefore involves mixing the materials together, freeze drying the mixture, reducing the copper, and finally a subtractive process step in which some of the materials are washed/leached away.

The cited Itoh et al. reference of course does not disclose Pt-Cu particle size of <25 angstroms. But it also does not disclose any preparation method similar to the applicants' process, or any other method which would provide the ordinarily skilled person with the means to achieve the particle sizes of the PtCu alloys as required in claim 1. Significantly, Itoh et al.'s preparation method, described starting at Col. 5, line 51, for example, does not include the freeze drying step. And Itoh et al. do not describe any subtractive step, e.g., applicants' acid washing step. In view of these deficiencies, which are not even hinted at by the disclosure of Itoh et al., the Itoh et al. reference does not provide the ordinarily skilled person with the means to prepare applicants' alloy compositions. Itoh et al. therefore cannot fairly be deemed to have "envisaged" Pt-Cu particle size of <25 angstroms. Nor can this size requirement fairly be "considered to be well within the skilled level of the artisan."

Moreover, Itoh et al. failed to enable the preparation of a Pt-Cu having an average particle size of <25 angstroms. As endorsed by MPEP §2121 and the Federal Circuit's opinion in *Impax Laboratories, Inc. v. Aventis Pharmaceuticals Inc.*, 88 USPQ2d 1381 (Fed. Cir. 2008), the prior art reference must enable the ordinarily skilled person to make the claimed invention without undue experimentation. See 88 USPQ2d at 1383:

In order to anticipate a claimed invention, a prior art reference must enable one of ordinary skill in the art to make the invention without undue

experimentation. Finisar Corp. v. DirectTV Group, Inc., 523 F.3d 1323, 1336 [86 USPQ2d 1609] (Fed. Cir. 2008) (citing In re Omeprazole Patent Litig., 483 F.3d 1364, 1379 [82 USPQ2d 1643] (Fed. Cir. 2007)). In other words, **the prior art must enable the claimed invention.** Minn. Mining & Mfg. Co. v. Chemque, Inc. (3M), 303 F.3d 1294, 1301 [64 USPQ2d 1270] (Fed. Cir. 2002).

In this regard, applicants are not contesting the operability of Itoh et al.'s technique for the preparation of catalyst materials having particle sizes of 28 angstroms or more, as evidenced by multiple production examples shown in Tables 1 and 2. However, the standard as set forth in *Impax Laboratories* requires the reference to enable the preparation of Pt-Cu catalyst materials having an average particle size of <25 angstroms. Since Itoh et al. fail to disclose such a process, applicants respectfully submit that the reference does not anticipate or render the claims obvious for the additional reason that the reference does not enable the claimed subject matter.

In view of the foregoing, the Itoh et al. reference neither anticipates nor renders obvious the compositions of claim 1, and applicants request the rejection be withdrawn.

Claims 2-9 and 72-78 depend from claim 1 and are patentable for the same reasons as claim 1 and by virtue of the additional requirements therein.

For example, claims 5, 6, 74, and 75 require the compositions have average particle sizes of less than 20 angstroms, or less than 15 angstroms. These claims are additionally patentable over Itoh et al. since they did not disclose any composition having particle sizes less than 20 angstroms. In fact, the composition which had the smallest

particle size was the pure platinum catalyst, having a particle size of 23 angstroms.

V. Double Patenting

Applicants acknowledge the provisional obviousness type double patenting rejections of the pending claims over certain claims of co-pending applications Ser. No. 11/205,557 and 11/341,139. Unless and until one or both of these applications matures into a patent, the appropriateness of the double patenting rejections cannot be ascertained. Applicant will consider filing a terminal disclaimer to obviate this rejection when one or both co-pending applications are otherwise in condition for allowance.

CONCLUSION

In view of the foregoing, applicants respectfully request reconsideration and allowance of the pending claims. Applicants do not believe that a fee is required for the filing of this response, as it is being submitted within the three months shortened statutory period for reply. Should applicants be incorrect, the Commissioner is hereby authorized to charge the necessary fee to Deposit Account No. 19-1345.

Respectfully submitted,

/paul fleischut/

Paul Fleischut, Reg. No. 35,513
SENNIGER POWERS LLP
100 North Broadway, 17th Floor
St. Louis, Missouri 63102
(314) 231-5400

PIF/NAK/mrt